

ABSTRACT OF THE INVENTION

A floating point rasterization and frame buffer in a computer system
5 graphics program. The rasterization, fog, lighting, texturing, blending, and
antialiasing processes operate on floating point values. In one embodiment, a
16-bit floating point format consisting of one sign bit, ten mantissa bits, and five
exponent bits (s10e5), is used to optimize the range and precision afforded by
the 16 available bits of information. In other embodiments, the floating point
10 format can be defined in the manner preferred in order to achieve a desired
range and precision of the data stored in the frame buffer. The final floating
point values corresponding to pixel attributes are stored in a frame buffer and
eventually read and drawn for display. The graphics program can operate
directly on the data in the frame buffer without losing any of the desired range
15 and precision of the data.